

Application Serial No. 09/636,571
Reply to Office Action of June 19, 2008

PATENT
Docket: CU-6003

REMARKS

In the Office Action, dated June 19, 2008, the Examiner states that Claims 66-78, 80-85, 87-90, 99, 100 and 102-148 are pending and rejected. By the present Amendment, Applicant amends the claims and the drawings.

Figure 2 is objected to because it contains reference numeral 102, which the Office Action alleges is not mentioned in the description of the present application. Applicant has amended Figure 2 of the drawings to delete reference numeral 102. As such, Applicant respectfully requests withdrawal of the objection to the drawings.

Claims 66-78, 80-85, 87-90, 99, 100 and 102-148 are rejected under 35 U.S.C. 112, first paragraph, for the reasons of record. Solely in the interest of advancing prosecution, Applicant has amended these claims in accordance with the suggestion in the Office Action. Specifically, Applicant has added language with respect to reacting the alcohol with acid anhydride groups of the reaction product, wherein the acid anhydride groups are generated during the first reaction by dehydration of un-reacted acidic groups. Accordingly, Applicant respectfully requests withdrawal of the present rejection under 35 U.S.C. 112, first paragraph.

Claims 66, 70-78, 80-85, 99, 100, 103, 104, 107-130 and 132-148 are rejected under 35 U.S.C. 112, first paragraph, for the reasons of record. Solely in the interest of advancing prosecution, Applicant has amended these claims in accordance with the suggestion in the Office Action. Specifically, these claims have been amended to specifically refer to adding the alcohol before viscosity rise of the solution or before the completion of the viscosity rise of the solution. Accordingly, Applicant respectfully requests withdrawal of the present rejection under 35 U.S.C. 112, first paragraph.

Claims 99, 100, 102-104 and 107-148 are rejected under 35 U.S.C. 112, first paragraph, for the reasons of record. Solely in the interest of advancing prosecution, Applicant has amended these claims in accordance with the suggestion in the Office Action. Specifically, Applicant has added language further defining that the highly stable polymers are obtained by the process that is claimed and discussed in the specification. Accordingly, Applicant respectfully requests withdrawal of the present rejection under 35 U.S.C. 112, first paragraph.

Claims 66-78, 80-85, 87-90, 99, 100 and 102-148 are rejected under 35 U.S.C. 112, second paragraph, for the reasons of record. Solely in the interest of

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advancing prosecution, Applicant has amended these claims in accordance with the suggestion in the Office Action. Specifically, Applicant has added language with respect to reacting the alcohol with acid anhydride groups of the reaction product, wherein the acid anhydride groups are generated during the first reaction by dehydration of un-reacted acidic groups and to specifically refer to adding the alcohol before viscosity rise of the solution or before the completion of the viscosity rise of the solution. Accordingly, Applicant respectfully requests withdrawal of the present rejection under 35 U.S.C. 112, second paragraph.

Claims 66-75, 80-82, 87, 99, 100, 102-112, 116-121, 125-127, 131 and Claims 76-78, 83-85, 88-90, 113-115, 122-124, 128-130 and 132-148 are rejected under 35 U.S.C. 103(a) as obvious over Rosenkranz et al. (GB 1,384,343), for the reasons of record. Claims 66-75, 80-82, 87, 99, 100, 102-112, 116-121, 125-127 and 131 are rejected under 35 U.S.C. 102(b) as anticipated by Rosenkranz et al. for the reasons of record. Applicant respectfully disagrees with and traverses these rejections.

Applicant respectfully asserts that Rosenkranz et al. discloses that the polymers may contain recurring units of acrylic or methacrylic acids. In the invention of Rosenkranz et al., however, the recurring units which contain acidic groups are not essential. The polymers synthesized in Examples of Rosenkranz et al. contained no recurring units that contain acidic groups. More specifically, the recurring units of the polymer synthesized in Example 1 were only hydroxypropyl methacrylate, methyl methacrylate and methyl acrylate. Those of the polymer synthesized in Example 2 were only hydroxypropyl methacrylate, methyl methacrylate and butyl acrylate. The polymer used in Example 3 was an unsaturated polyester.

The highly stable polymer of the present invention contains essentially a recurring unit having an acidic group; therefore, when reacted with an isocyanate compound, an acid anhydride group is obtained as a by-product. The acid anhydride group cross-links molecules of the polymer, thereby causing a problem of increased viscosity.

The polymers of Rosenkranz et al., however, necessarily contain no recurring unit having an acidic group. Therefore, when reacted with an isocyanate compound, no acid anhydride group is obtained as a by-product, so that no problem of increased viscosity occurs.

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In addition, it is disclosed in Rosenkranz et al. to improve the storage stability of the polymers by adding thermal inhibitors such as phenol derivatives or hydroquinone derivatives or stabilizers such as copper salts.

Phenol derivatives and hydroquinone derivatives include derivatives having a phenolic hydroxyl group. However, phenol derivatives and hydroquinone derivatives are compounds which are well-known as antioxidants. Even in Rosenkranz et al., they are stipulated to provide an antioxidizing effect and mentioned as agents which are equal to the stabilizers containing no hydroxyl group, such as copper salts.

The polymers synthesized in the Examples of Rosenkranz et al. contain no hydroxyl group; therefore, there is no teaching, suggestion or motivation to one of ordinary skill in the art, to provide an acid anhydride group produced on the polymer chain as a by-product and have it decomposed by the reaction with phenol or hydroquinone derivatives.

Yet another difference between Rosenkranz et al. and the rejected claims is that Rosenkranz et al. discloses higher alcohols as solvents. In the invention of Rosenkranz et al., however, higher alcohols are disclosed as an organic solvent with which, after the polymers of Rosenkranz et al. are synthesized to prepare coatings and the surfaces of the coatings are partly exposed, the unexposed areas thereof are washed out (see page 3, right column, lines 108-109). The use of higher alcohols in the synthesis step of the polymers is not disclosed in Rosenkranz et al.

Therefore, there is no teaching, suggestion, or motivation for one of ordinary skill in the art to conceive of such a concept in which an acid anhydride group produced on the polymer chain as a by-product is decomposed by the reaction with higher alcohols.

Accordingly, Applicant respectfully requests withdrawal of the rejection of Claims 66-75, 80-82, 87, 99, 100, 102-112, 116-121, 125-127, 131 and Claims 76-78, 83-85, 88-90, 113-115, 122-124, 128-130 and 132-148 under 35 U.S.C. 103(a) and the rejection of Claims 66-75, 80-82, 87, 99, 100, 102-112, 116-121, 125-127 and 131 under 35 U.S.C. 102(b).

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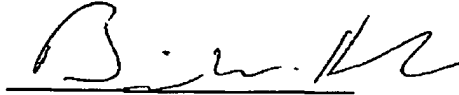
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In light of the foregoing response, all the outstanding objections and rejections are considered overcome. Applicant respectfully submits that this application should now be in condition for allowance and respectfully requests favorable consideration.

Respectfully submitted,

November 19, 2008

Date



Attorney for Applicant
Brian W. Hameder
c/o Ladas & Parry LLP
224 South Michigan Avenue
Chicago, Illinois 60604
(312) 427-1300
Reg. No. 45613